

A M A T E U R R A D I O

SEPTEMBER 1963



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DC 8450 = 50.7 Mc.	DC 8014	DC 8019	DC 8023.5	DC 8028.5	DC 8033
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★

OUR COVER

During the past thirty-five years
circuit components have been reduced
in size and valves are no exception.
Our cover shows a typical
series of valves used during the past
decades, and clearly shows the size
reduction; all are of the same type.

FEDERAL COMMENT

★

At the Convention in Sydney earlier this year, the Federal Councillors agreed to put various schemes into operation immediately to raise monies from their members for the purpose of financing the trip of a W.I.A. representative to Geneva for the next International Telecommunication Conference. Each Division was given a subscription target figure based on their proportion of the total Institute membership, the total amount being estimated as about £3500.

Several Divisions have already made appeals to their members for subscriptions—some based on a small fixed amount for two or three years added to their membership dues, while other Divisions have thoughts on raising their quota by direct donations from their members. However, the important point is not so much how the money is raised, but why.

Most members of the W.I.A. have so often heard those familiar words—"to protect your frequencies"—that they have now become meaningless. Nevertheless, this statement is just as valid today as when it was first made. Commercial pressures at future conferences will be heavier than ever before, in addition to the clamour of many new services inaugurated at the last conference.

One might question the need for the Institute to send a delegate overseas but the reasons are many. The most important of these is that he is able to meet and discuss the Institute's problems with other societies' representatives and his very presence at the Conference will impress anyone that the Institute is taking the whole matter very seriously, to the extent of raising sufficient funds to send him and keep him there. For an Institute as numerically small as ours, compared with other overseas societies, this must reflect itself in added prestige. There are other less obvious reasons, all of which taken together, make it imperative for us always to send an Institute delegate to these conferences.

Your Divisional Council will in the near future be asking for your subscription or donation in a manner to be decided by them. Whatever amount is decided will be insignificant when compared with the price of other commodities today and will be a small enough price to pay for the continuance of our privileges. Be sure you subscribe to this fighting fund—be you an Institute member or not—for you may rest assured that any amount will be gratefully received and faithfully applied.

FEDERAL EXECUTIVE, W.I.A.

CONTENTS

Double Conversion With No Con- fusion	2	Jamboree-on-the-Air, 10th and 20th October	13
Pye Radio-Telephones	5	Book Review: More About Loudspeakers	11
A Transistorised S.s.b. Receiver	7	"CQ" Amateur Radio Anthology II	11
Determining Mixer Current	8	Radio Data Reference Book	11
A Sweep Generator for Aligning High Frequency Crystal Filters	8	Understanding Amateur Radio	11
Further Notes on Modifying AR7 for S.s.b.	8	The World Radio T.V. Hand- book	11
Spurious Responses in FT243 Crystals	9	Correspondence	16
Another Method of Generating S.s.b.	10	Federal and Divisional Monthly News Reports	18
Technical Correspondence: Over- tone Frequency of Crystals	13	DX	17
Sideband Topics: Do You Offend?	9	SWL	14
160 Metres—U.S.A.	9	Youth Radio Clubs	14
Do You Know Your "Istors"?	6	VHF	15

Double Conversion With No Confusion

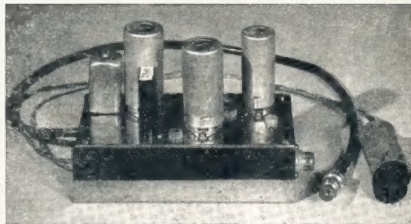
J. D. PURDON,* VK4PU

The circuit diagram with this article is of the Mark I. version, whereas the photographs are of the Mark II. version. The author recommends the inclusion of the L.T. R.F. choke visible in the photograph, but not shown in the circuit, as the omission of this component could lead to real strife.—Editor.

MOST mobile receiving systems are designed around the use of a high frequency converter working into the standard b.c. car receiver, which serves as a tunable i.f. and audio amplifier. The car receiver is modified in most instances to take a noise limiter and provide power for the converter.

With the 50 megacycle band and image rejection in mind, a double conversion system is preferable and yet, the usual method of employing two crystals becomes sufficiently expensive to deter most of us from taking advantage of it. While on the other hand the one crystal plus one self excited stage, though usable, is not highly desirable for obvious reasons. However, if double conversion and crystal control throughout can be achieved with the use of only one crystal, these objections are no longer valid.

So it was with these thoughts uppermost that the following circuit was developed using a crystal around 7.360 Mc. Almost the first megacycle of six metres can be covered on the broadcast



Double Conversion Converter

dial, leaving a little room to spare below the band. Two of these converters have been constructed and are in use at the present time, giving really excellent performance.

Briefly, this is what happens. As shown in Fig. 1, a 6AN7, with its output on the broadcast band, has a crystal oscillating at 7.360 Mc. This frequency is multiplied six times in the triode section of a 6BL8; the product, 44.160 Mc., is mixed in the pentode section of the same tube with the incoming 50 Mc. signals from a 8AG5 r.f. amplifier. Now we do our sums and find that the difference frequency of 50 Mc.

minus 44.160 Mc. equals 5.840 Mc. This 5.840 Mc. signal is fed into the 6AN7 where it mixes with the original crystal frequency 7.360 Mc. Again the difference frequency, 7.360 — 5.840 equals 1.520 Kc., the top end of the b.c. band. The receiver tunes down in frequency to tune up on the 6 metre band.

It is of passing interest only, but perhaps worthy of mention here, that although this crystal frequency was chosen for the 50 Mc. mobile converter in particular, by a happy coincidence it also works out conveniently for the 21 and 28 Mc. bands. 21 Mc., using the fourth harmonic, falls on 1080 to 830

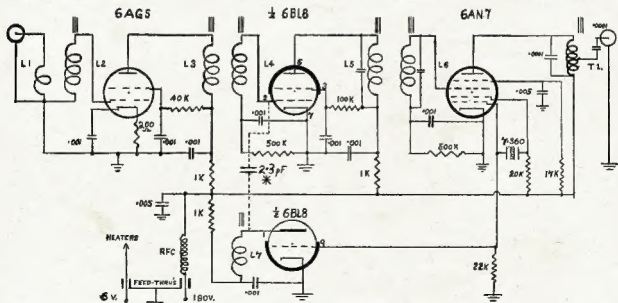


Fig. 1.—Double Conversion Converter. * May not be required.

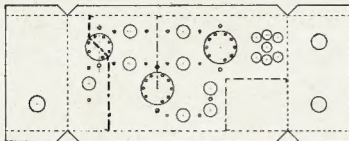


Fig. 2—Half Scale Template. Dimensions after bending, $\frac{5}{8} \times \frac{3}{4} \times 1\frac{1}{4}$ inches. Bend up along the dotted lines. Shields shown as broken lines.

Kc. 28 Mc., using the fifth harmonic, falls on 1440 to 540 Kc.

For those of you who may be reluctant to embark on a project such as this, in view of the impending loss of 50 Mc. to certain victorious commercial interests, take heart! for by simply buying a rock 10 kc. lower, you can still have some of your cake and the 52 Mc. band as well.

As before, the crystal operates in the 6AN7 but at 7.350 Mc. this time, multiplied six times it becomes 44.100 Mc. 52 Mc. — 44.100 Mc. equals 7.900 Mc. Now subtract the crystal frequency from 7.900 Mc. and Q.E.D., 550 Kc. This time, the receiver tunes up in frequency on the b.c. band to tune up to 53 Mc. Naturally the coil dimensions will have to be changed somewhat, but in the case of L2, L3, L4 and L7 this would amount to no more than a turn or two at the most. As for L5 and L6, the modification mentioned later in the article regarding these coils would be most effective.

CONSTRUCTION

The accompanying under-chassis photograph and the half-scale template should make the job easier and no difficulty should be experienced in laying out all the components providing they are the miniature disc ceramics, feed-throughs, and $\frac{1}{2}$ -watt resistors as used here.

Tie points are provided by using feed-through capacitors in some instances, and in others by the collars of the coil formers themselves which incidentally are 6d. 5.5 Mc. video coils somewhat modified.

It may be as well to draw attention at this point to the differences between the prototype and the Mark II. version. The latter, although using essentially the same circuit, was re-arranged for a more compact layout and utilises a 12 volt heater run. It is this version which is shown in the photographs and template diagram.

The coils L5 and L6 were modified by replacing the original turns with pies from miniature i.f. transformers, and omitting the parallel capacitors, thereby broadening the bandpass. However, to avoid confusion, the coil data as used in the original version is listed here, and the constructor may experiment as he thinks fit. Some experiment with the output transformer T1 may be helpful also, in order to get optimum matching into the receiver.

In both Mark I. and Mark II., T1 is an aerial coil from a car radio coil kit and output was taken through a 100

pF. capacitor from a tapping on what is normally the grid coil.

The shield across the r.f. amplifier socket must not be omitted and should extend the full width and depth of the chassis. There are three shields all told, shown on the template as broken lines.

The cable carrying h.t. and l.t. is run in shielded wire, well grounded at both ends and terminated by a suitable plug for attachment to the receiver power supply.

A handy anchorage for both the coax and shielded pair is provided by discarded potentiometer shaft bearings which are first carefully soldered to the braid and then held in place in the chassis by their hexagonal nuts.

COIL DATA

All r.f. coils are 5.5 Mc. video coils, or $\frac{5}{16}$ " diam., 28 gauge, with slug.

L1—2½ turns on the cold end of L2.
L2—Remove 200 pF. capacitor, leave the slug and 13 turns.

L3—Remove 200 pF. capacitor, leave the slug and 13 turns.

L4—Remove 200 pF. capacitor, leave the slug and 13 turns.

L5—Leave as is.

L6—Leave as is.

L7—Remove 200 pF. capacitor, leave the slug and 17 turns.

T1—Miniature aerial coil.

R.F.C.—50 turns 30 gauge enamel wire close wound on a 1 meg. 1 watt resistor.

ALIGNMENT PROCEDURE

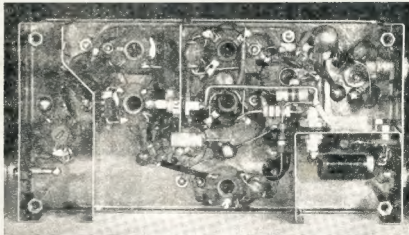
Assuming that all coils have been grid-dipped reasonably close, the converter is plugged into the receiver or power source, the valves light up, and that whisp of smoke is only from your cigarette after all!

Make sure the crystal is oscillating, either by listening to it on a nearby receiver or reading the grid current. Then inject a low level 6 Mc. signal into the 6AN7 grid. Peak T1 about the centre of the b.c. band. Move the generator or signal source up to the grid of the first mixer (pin 2, 6BL8) and roughly peak L5 and L6. These can be stagger tuned later. The 6 Mc. signal is removed and a 50 Mc. one lightly coupled in its stead. Peak the core of L7, the multiplier coil.

If everything has gone according to plan thus far, it should be possible to place the base cover on our converter and complete the alignment from above the chassis with the antenna connected. Simply run the signal generator nearby and peak the core of L2, L3 and L4 until you are sure of the signal, then stagger tune L2, L3, L4, L5 and L6 for even response across the band.

That's all there is to it. Three feet of wire clipped to the generator or a crystal oscillator will provide an S9 signal 50 yards away.

In conclusion, I would like to express my gratitude to Don Stoner for having in his excellent Sideband Handbook given me the clue for this unique method of crystal juggling. To VK4VB, who loaned me the Handbook in the first place and is still patiently waiting for my carrier and lower sideband to disappear. To Ken Chiverton for constructing and photographing the streamlined Mark II. model and ably abetting me in the presentation of this article. Last and by no means least, to that stalwart v.h.f. gentleman whose name heads the W.A.S. 50 Mc. list, without whose encouragement, I would never have been game to try.



Under-chassis view of Converter.



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PYE RADIO-TELEPHONES

With the advent of these units through W.I.A. disposals, Amateurs will no doubt be interested in the details regarding these units. The Publications Committee has a copy of the circuit diagram, but unfortunately it is not suitable for reproduction in these pages. However, arrangements have been made to supply photo copies at a cost of 3/- each to those interested.

Two basic types were produced, namely PTC116 operating between 60 and 100 Mc., and PTC117 operating between 100 and 184 Mc. These models operate from 12 volts d.c. Models for 6 volt operation have the suffix A, e.g. PTC116A. Some models may have the suffix W. These are fitted with wide-band transformers.

The transmitters are amplitude modulated, and using the double button carbon microphone supplied had a frequency response quoted as ± 2 db. from 100 to 3,000 c.p.s.

The valve line-up is xtal oscillator-multiplier, EF91; first multiplier, EL91; second multiplier (used in PTC117 only), L77; power amplifier, ECC91; modulator, EL42; the power output being better than 2.5 watts at 60 Mc., and better than 1 watt at 185 Mc.

The transmitter crystal frequency can be calculated from the following table:—

- PTC116 (60-100 Mc.):
carrier frequency $\div 6$.
PTC117 (100-120 Mc.):
carrier frequency $\div 8$.
PTC117 (120-184 Mc.):
carrier frequency $\div 12$.

The receiver is crystal locked and crystal frequency can be calculated as follows:—

- PTC116 (60-80 Mc.):
(carrier freq. $\div 2.9$ Mc.) $\div 7$.
PTC116 (80-100 Mc.):
(carrier freq. $\div 2.9$ Mc.) $\div 9$.
PTC117 (100-140 Mc.):
(carrier freq. $\div 2.9$ Mc.) $\div 11$.
PTC117 (140-184 Mc.):
(carrier freq. $\div 2.9$ Mc.) $\div 17$.

A receiver sensitivity of $2 \mu\text{V}$ for an a.f. output of 50 mW. from a test signal modulated 30% at 400 c.p.s. may be expected. The signal to noise ratio is 8 db. or better for $1 \mu\text{V}$ input signal.

The a.v.c. characteristic is level within ± 3 db. for r.f. inputs between $5 \mu\text{V}$ and 100 mV. Maximum a.f. output is one watt into a three ohm speaker. An impulse type noise limited is fitted.

First i.f. image response of model PTC116 is 75 db. down, and all other spurious responses 80 db. down. For model PTC117 they are 55 and 60 db. respectively. The first i.f. frequency is the crystal plus 2.9 Mc., and the second i.f. frequency 2.9 Mc.

The valve line-up for the receiver uses five EF91s, two EF92s, one each DH77 and EL42.

The r.f. amplifier, crystal oscillator-multiplier, multiplier, first mixer and second i.f. amplifier are EF91s. The second mixer and first i.f. amplifier are EF92s. The DH77 is the detector, a.v.c. and a.f. amplifier. Audio output is provided by the EL42 which is also the modulator tube. The PTC

117 model uses a 6AK5 as the r.f. amplifier instead of an EF91.

The 12 volt models take 3 amps. on receive only, 3.5 amps. on stand-by, and 4 amps. on transmit. Approximately double these currents are drawn by the 6 volt models.

The eight-pin socket on the side of the unit is used to connect a test meter

(Type PTC405A) for alignment purposes. Although the Publication Committee have details of this test meter, it is considered that the average Amateur will be able to align this equipment with instruments already in his possession.

—Written by "A.R." staff from information supplied by I. F. Berwick, VK9ALZ.

Converting Units for 50 Mc. Mobile

Noting the reference in "A.R." May issue, to the possible use of an a.m. net on 53 Mc., the following information is given of previous conversions of these commercial units which will allow a quick conversion to be made with little brain teasing. The diagrams will allow you to quickly identify the components which it will be necessary to alter.

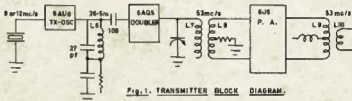


Fig. 1. TRANSMITTER BLOCK DIAGRAM.

THE TRANSMITTER

The slug tuned coil L6, when paralleled with a 27 pF. condenser, will resonate nicely at 26.5 Mc. Remove the 5 pF. mica condenser if there is already one in the circuit and save it for future use. Coil L7 should be removed from the Philips trimmer and replaced with a coil of same diameter and turns as L8. This coil resonates at 50 Mc. Finally replace the 6J6 plate coil (L9) with one wound of 12 gauge tinned copper wire, 11/16" internal diameter

the 6J6 is neutralised and that the transmitter is crystal controlled. Normally the neutralisation will already be set and will not need adjustment.

THE RECEIVER

The receiver is double converted, the fundamental of the crystal is used to control the conversion from the first to second i.f. Originally the eighth harmonic of the crystal was used to achieve the first conversion from the channel frequency to the first i.f.; in

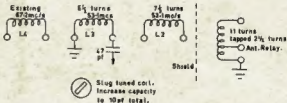


Fig. 2. RECEIVER COIL ALTERATION DATA.

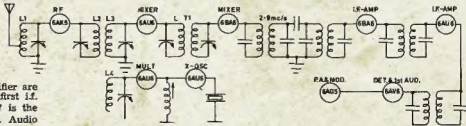


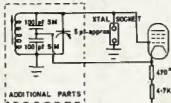
Fig. 3. BLOCK DIAGRAM OF RECEIVER.

our case we use the sixth harmonic. This is achieved as follows:—

Crystal frequency, 11.2 Mc.; sixth harmonic, 67.2 Mc.; receiver frequency, 53.1 Mc.; difference frequency, 14.1 Mc. As the second i.f. of the receiver is 2.9 Mc., the first i.f. equals 2.9 Mc. plus crystal frequency, equals 14.1 Mc., which is the difference frequency achieved in the first conversion, Q.E.D.

To commence to convert the receiver, tune T1 primary and secondary to 14.1 Mc. with the 11.2 Mc. crystal in place. L5 should have a total of 10 pF. placed across it and resonated using a g.d.o. to 33.6 Mc. L4 should resonate to 67.2 Mc. with no change in circuit. L1 will require re-winding to 11 turns, tapped 2½ turns from the earth end, and is to resonate at 53.1 Mc. L3 should be

re-wound with 6½ turns and also resonated at 53.1 Mc. with the 47 pF. coupling condenser attached to the top end of the coil. Finally, re-wind L2 with 7½ turns and resonate to 53.1 Mc. At this stage, if the unit was in working order before starting, a signal at 53.1 Mc. introduced at the aerial terminal, will allow the coils to be peaked, the sensitivity should be better than 2 µV. for 50 mW. output.



CONL: 20 turns 22 SWG Enam ½" Diam. Close wound ½" long.

Fig. 4. MODIFICATION FOR TUNABLE RECEIVER

You will notice that all the trimmers in the r.f. section resonate the circuit with very little capacity. This has been done purposely to keep the circuits reasonably wide-band. If you wish to make your mobile tunable over the range of 53.0-53.2 Mc., put aside for net purposes, this may be easily achieved by the following method. The crystal is removed and replaced by a variable tuned circuit which tunes 11.175 to 11.225 Mc. This will give a receiver frequency range of 52.975 to 53.225 Mc.

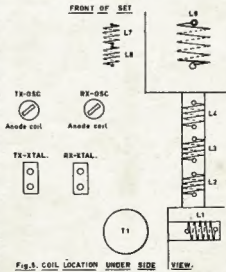


Fig. 5. COIL LOCATION UNDER SIDE VIEW.

Fig. 4 shows the circuit used. The variable capacitor and inductance will require juggling so that it covers the specified frequency (11.175 to 11.225 Mc.). The writer will be pleased to answer any queries enclosing a s.a.e.

—K. Woodward, VK2ZAU.

DO YOU KNOW YOUR "ISTORS"?

The term "transistor" and of course "resistor" are now well known. A host of similar terms are now appearing in electronic terminology, particularly in the U.S.A.

(A) CHRONISTOR

A sub-miniature electro-chemical elapsed time indicator. The indicator is a miniature electroplating bath, the size of a glass cigarette case. When a current of about 1 mA. drawn from the equipment being timed, passes through the unit, metal ions are deposited on the cathode which then changes in length with time. A time scale directly calibrated in hours is included.

(B) FERRISTOR

A miniature (9/16 inch cube) two winding, ferrite cored reactor which may be connected as an oscillator, free-running multi-vibrator, input amplifier, time base, or ring counter. They are immune to damage from shock, vibration and accidental overload and are unaffected by humidity or temperature. They are designed to replace valves in high speed magnetic amplifier applications and in counting circuits.

(C) MAGNISTOR

A small saturable reactor for the control of pulses and sine waves from 100 Kc. to 30 Mc. at power levels under 100 watts. It has applications as a gate, switch, counter, register and amplifier.

(D) PERSISTOR

A miniature bi-metallic printed circuit loop operating at temperatures near absolute zero! Its operation being based on the superconductivity characteristics of some metals at low temperatures. It has switching and storage applications in computers.

(E) RESISTOR

A current component which opposes the flow of current.

(F) SPACISTOR

A four-terminal transistor (base, collector, injector and modulator) utilising a reversed bias "p-n" junction to create a space charge for a very short period of time. It has an input frequency limit of about 10,000 Mc. and an output impedance of about 30 megohms.

(G) STABISTOR

A silicon diode which maintains a constant voltage drop of 0.5 volt in the forward direction.

(H) SURGISTOR

A miniature resistor and relay for insertion in the B plus circuit to limit current until the valve heaters and/or cathode are warmed sufficiently to accept full voltage without damage.

(I) THERMISTOR

A temperature-sensitive resistor with a high negative temperature co-efficient used in temperature compensation, time delay, power measurement and switching applications.

(K) THYRISTOR

A high-current, high-speed (0.00000000 sec.) switching transistor which can also be used as a high frequency amplifier.

(L) TRANSISTOR

A crystal type amplifying device made of a semi-conducting material such as germanium or silicon operating on the principle of electron flow in a solid.

(M) TWISTOR

A memory system developed by Bell Telephone Laboratories based on the fact that the magnetisation direction of wire made of magnetic material changes from lengthwise to helical if the wires are twisted, thus allowing memory matrices to be made without magnetic cores.

(N) VARISTOR

A network of four carefully matched (within 1 mA. at plus or minus 1 volt) diodes for use in bridge circuits or as a balanced modulator for carrier suppression.

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A TRANSISTORISED S.S.B. RECEIVER

VICTOR J. KITNEY,* VK6VK

FOR some time I had been considering the construction of a new receiver for the shack. The present one was built basically some years ago at Ballarat and has been modified several times as the mood caught me.

With the advent of transistors and some ideas suggested by my associates at work, I decided to take advantage of transistors for my next receiver.

INTRODUCTION

The circuit follows the same general arrangements as the superceded valve job that I was using, i.e. double conversion, half-lattice xtal filters in the second i.f., and it is constructed for s.s.b. use only.

CONSTRUCTION

Throughout the unit common emitter configuration has been used. The r.f., mixer and oscillator stages are built around OC171s and mounted on a small piece of matrix board 5" long by 7 holes wide. The d.c. supply for this board is regulated to -4 volts, using an OA2203 zener diode, through a divider network.

To allow coil switching for band changing a minimum of tappings are used. This gives an unconventional appearance to the circuit by using capacitive impedance dividing network across the serial coil. Also the collector coil on the r.f. stage has no collector tap.

The r.f. board is mounted on stand-off pillars under the chassis.

The i.f. and audio sections are assembled on matrix board 12" long by 9 holes wide and mounted on stand-off pillars on top of the chassis. The 455 Kc. i.f. section is supplied from -6 volts rail through a dropping resistor from the -9 volts supply. The audio section is operated directly from the -9 volts.

The first i.f. is 2 Mc. In order to obtain satisfactory i.f. gain control without introducing distortion, as was found to occur when varying the base bias, the idea of a carbon pot. across the low impedance link, to the base of the second mixer, was conceived. This allows the r.f. stages to function at full gain at all times. The 2 Mc. i.f. transformer was scramble wound and a link wound against the secondary winding.

The second mixer is a copy of the first and emitter injection is obtained from a xtal oscillator. Considerable time was spent in trying to get the xtal oscillator to work, and it was later discovered that the original xtal tried had very low activity. The present xtal oscillated readily and no feed back condensers were required.

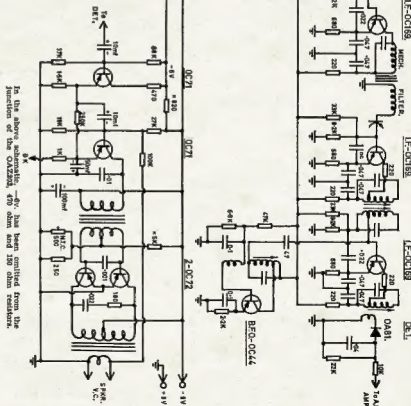
The second i.f. is 455 Kc., and use is made of a Collins mechanical filter to take care of selectivity. Here the circuit follows conventional lines, using double tuned transformers (Philips CZ320.483). The gain of the 455 Kc. section is quite high with the particular filter I have.

The collector current is fed through the input winding of the mechanical filter. As this is only about 1 mA., it is not considered detrimental to the filter. Note that the output of the filter is series tuned as it is working into a very low impedance at the base of the OC169. The neutralising condenser Cn is determined experimentally to suit the circuit.

The circuit of the b.f.o. is conventional, and operates all the time. The b.f.o. signal is amplified by feeding it into the base of the last i.f. amplifier before the detector. This has worked out satisfactorily, but some pulling of b.f.o. frequency is noticed when aligning the i.f.s. at this point. (I have since obtained a xtal for the b.f.o. which suits the mechanical filter.)

The diode functions quite satisfactorily as a product detector with arrangements as above. There is a fairly large by-pass condenser on the diode load, but this, together with the 10K resistor, helps to form a decoupling network and pre-

(Continued on Page 11)



* 2 Sampson Road, Kalamunda, W.A.

SIDEBAND TOPICS—BUD POUNSETT,* VK2AQJ

DO YOU OFFEND?

No, no, this is not a toothpaste ad, but it is just as important. The question is, do you offend the other Amateurs who are using the same band, or adjacent commercial users by transmitting spurious signals?

It has been noted recently that several Amateurs in the capital cities have poor signals on the 20 metre band. The major complaint being interference to fellow Amateurs who live within a radius of up to five miles or so. This does not mean that country Amateurs do not transmit these illegal signals, very often there is no-one close enough to notice them. It also appears that the condition does not exist for any length of time on the 40 or 80 metre bands. Probably this is explained by the different propagation characteristics of these bands allowing these spurious signals to be heard over greater distances within Australia, resulting in general complaint from near and far.

If your transmitter radiates these totally unnecessary signals, you are the guilty one. Why should you inconvenience your fellow Amateurs? Why should you break the rules by spreading your signal over hundreds of kilocycles when it would be far more effective on the one single channel. You are also bringing sidebanders in general into disrepute and this is serious indeed.

In March 1963 "QST" is a very fine article written by "QST" technical editor, George Grammer, W1DF. If you have had any complaints directed at you, this article will greatly assist you in cleaning up your transmitter. We all like to feel that we are above reproach, we can make sure by following the suggestions in this article, "Checking Signal Quality With the Receiver". I found that an old steam iron with a broken thermostat and a

rather rusted up but serviceable element made an excellent dummy load if fed via an antenna coupler.

Howard L. Morrison, W7ESM, wrote an interesting article in "CQ," March 1963, entitled "Pentagrid Mixers for S.s.b. Exciters". This article has plenty of meat in it and contains some thought provoking ideas. [Our Editor may find space for it in a later issue.] Briefly it describes the advantages to be had by using such tubes as the 6SA7, 6SB7Y, 6HE6, 6BA7.

These tubes were especially made to function as mixers, but Mr. Morrison points out that when these tubes are used in receivers grid one is allowed to draw grid current. The grid-cathode circuit forms a diode circuit which is an efficient harmonic generator. When used in an s.s.b. exciter, this can lead to all manner of signals appearing in the output circuit which unless it has sufficient selectivity will pass these signals along toward the antenna. It is therefore recommended that these tubes not be operated under grid current conditions in the heterodyning oscillator input grid (normally grid No. 1) circuit. The article sets out some sample combinations of signals and harmonics that can create spurious signals quite close to the operating frequency.

Another source of spurious radiations is the choice of intermediate frequencies within the transmitter. Great care must be exercised in choosing these frequencies and their associated oscillator

frequencies, if a departure from a tried and proven design is contemplated.

Yet another source is the transmitter constructed with little or no thought given to shielding one stage from another. You cannot over do this shielding, too much is far safer than too little. You must restrict all the various signals in your sideband transmitter to those paths that the design intends, let them wander from the "straight and narrow" and you are in trouble.

If you find that your transmitter has output on other than the proper channel, do something about it. You will find plenty of people ready to help you, especially those you are keeping off the air. After all, it is your technical reputation that is at stake.

160 METRES—U.S.A.

Here is a brighter note. The F.C.C. in Washington, D.C., issued an order on February 23, making several changes in 160 metre frequencies within the U.S.A. and prohibiting the use of single sideband in this band. The order was scheduled to come into effect on April 15. Loud protests were forthcoming from all over the country and after an investigation into the interference aspect to the Loran service, the F.C.C. amended the order on April 16 to remove the ban on s.s.b. operation in this band. Has anyone heard any DX on s.s.b. on 160?

Spurious Responses in FT243 Crystals

While in the process of aligning a high frequency crystal filter (5.78 Mc.) with the aid of a sweep generator and a c.r.o., mounting frustration drove me to check the response of individual crystals, and found that out of eleven crystals, nine had spurious responses on the high frequency side of the main response, having amplitudes nearly as high as the main response.

Having spoken a terse verse or two, I stripped the crystal holders of both good and bad crystals to see if there was any basic difference, and found a wide variation in holders and mounting plates.

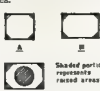


Fig. 1. CRYSTAL HOLDER PLATES.

I found, that apart from differences in pressure spring arrangements, that there was one square crystal, mounted between flat plates, on corner lands (good crystal); one rectangular crystal, mounted on corner lands, but with a

circular cut away in the plates, and a button in the middle (see drawing); this was also free of spurious responses. There were eight rectangular crystals, mounted on corner lands between flat plates (all very bad); and one rectangular crystal with a flat plate with corner lands on one side, and a circular cut-away plate on the other (moderately bad).

An idea springing to mind, I changed one of the bad crystals from a type "B" (see Fig. 1) to a type "C" holder and was rewarded with a clean response. Then I took a good crystal from a type "C" holder, and put it into a type "B" holder, and presto! Spurious responses from here to breakfast!

So, I selected the frequency plates I wanted, and put them in type "C" holders, and no more spurious troubles. So if you are building a high frequency crystal filter, and the pop-ups are driving you mad—have a look at the crystal holders!

As a final note, I might mention that the crystals involved were made by six different manufacturers, so there does not seem to be much doubt that the choice of crystal holding plate holds the key to spurious responses in rectangular plate FT243 crystals.

—J. Macmillan, VK3CS.

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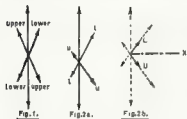
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ANOTHER METHOD OF GENERATING S.S.B.

Basically this method is a phasing system which achieves the necessary audio phase shift by means of a stragatagem carried out at a radio frequency.

Consider a normal a.m. signal in antiphase to an identical signal (Fig. 1). Obviously both carrier and sideband frequencies will cancel out. Consider now what will happen if the upper sideband of one signal and the lower sideband of the other signal are attenuated (Fig. 2a). The resultant is shown in Fig. 2b.



A little thought will show that if the resultant sidebands were demodulated with an inserted carrier χ , the resultant audio would be in quadrature (at 90°) to the original audio. The question is, is it possible to achieve this result?

Suppose an a.m. signal is generated at 5 Mc. and is fed through an off-tuned

resonant circuit. One set of sidebands will be attenuated more than the other. Forget for the moment the progressive phase shift across the signal spectrum so produced.

Now, suppose we take our original 5 Mc. unmodulated signal, multiply it by, say, 3 to 15 Mc. and feed it to one mixer, and by 5 to 25 Mc., and feed it to another mixer and combine the outputs of the two mixers at 15 Mc., with the lopsided a.m. as a common input (Fig. 3).

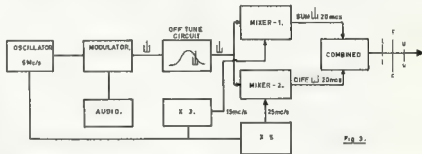
As one of the "local oscillators" is above the output frequency and one below, the resultant 15 Mc. signals have the sidebands exchanged so that, provided that we arrange the 15 Mc. "carriers" (produced from the 5 Mc. input) to be in antiphase, the condition shown in Figs. 2a and 2b will prevail.

As both mixers are fed with the same 5 Mc. signal, and the "spectrum" phase shift produced by the off-tune circuit is assumed to be symmetrical about the carrier, the effect of this will cancel.

All that remains is to mix the resultant d.s.b. output with d.s.b. produced at 15 Mc. (5 Mc. \times 3) with the original audio, ensuring that the r.f. phase shift is 90° between the two, adjust the signal levels for cancellation, and we have s.s.b., by (basically) the phasing method.

I have deliberately avoided mention of practical problems in this discussion as this (original I believe) scheme is at present on a purely theoretical level and I feel is worthy of provoking some interesting discussion in Technical Correspondence.

—I. Macmillan, VK3CS.



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Output: —50 db.
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Impedance: 50,000 ohm, 250 ohm or 60 ohm.
Dimensions overall: 40 x 40 x 98 mm.
(1-9/16" x 1-9/16" x 3-13/16").
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Book Review

MORE ABOUT LOUDSPEAKERS

First Edition, by G. A. Briggs

Mr. Briggs seems to be as famous for his witty publications as he is for his excellent loudspeakers. To quote Mr. Briggs from his introduction, "This is not a text book." He that as it may, he has included all the information needed to understand the operation, housing of, and listening to of loudspeakers.

A chapter on the design of cross-over networks is most complete in its coverage, as is the chapter on cabinet design.

We all know of course that sound reproduction is a controversial subject, so Mr. Briggs has included answers to a questionsaire by such famous names as James Moir, Cecil Watts, and Percy Wilson. This makes very interesting reading.

All in all, a book warmly recommended to those who like to explore the paths of high fidelity sound reproduction.

Our copy from McGill's Newsagency, 183 Elizabeth St., Melbourne. Price, 15/8 posted.

"CQ" AMATEUR RADIO ANTHOLOGY II.

Edited by Art Seldman, K2BUS

Undoubtedly there are scores of Amateurs who possess a copy of "CQ" Anthology Volume 1, and who also refer to it at frequent intervals. This new edition covers the years 1952 to 1959 and consists, as did volume 1, of the best and most topical articles published in "CQ" magazine during that period.

The material is divided into eleven sections as follows: Improving equipment, v.h.f., s.s.b., surplus, mobile, transmitters and receivers, theory, operating, test equipment, r.f.y. and history.

Here is a book with something for everyone. A book you will be constantly referring to.

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When the now famous R.S.G.B. Handbook was released it was immediately apparent that this was going to be a best seller.

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A few of the subjects covered are: aerial design, balun design, coax cables, frequencies of FT241 crystals, db. calculations, filter design, inductance charts, maths, tables, p network tank circuit design, and we could go on and fill the page with subjects alone.

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UNDERSTANDING AMATEUR RADIO

By George Grammer, A.R.R.L.

When George Grammer adds his signature to publication we can expect to see something special. "Understand-

ing Amateur Radio" is a new type of publication for A.R.R.L. It is designed for the beginner, but where many similar books leave him out on a limb, this one goes all the way. It is in fact a book that any Amateur, new or old, would find of great use. This applies particularly to the Australian Amateur as the transmitting equipment goes up to around the 150 watt mark.

Theory chapters are up to date and written in a most interesting manner. Construction includes h.f. and v.h.f. transmitters and converters.

Price of this book is 28/6, which seems excellent value for over 300 pages of concise information. It is published by the American Radio Relay League.

Our copy direct from A.R.R.L.

THE WORLD RADIO T.V. HANDBOOK 1963, 17th Edition

From Denmark comes the 17th edition of this well known publication, and as usual it is packed with information for S.w.'s and Amateurs alike. Apart from a complete list of short, medium and long wave broadcasting stations, t.v. and f.m. stations, there is comprehensive information on such things as solar activity, aeriels, frequency allocations, short wave conditions, etc. This book is better than ever and definitely recommended.

Copies from The Technical Book and Magazine Co., 295 Swanston St., Melbourne, and direct from the publishers, O. Lund Johansen Ltd. Local price is 31/- plus postage.



Peter Drew, WIA-L6021, an ardent Short Wave Listener.

EX-VR4CV

Alan Viegas, who was very active (mostly on c.w.) for quite a while as VR4CV, is at present living in Victoria. He gave many VECs their first VR4 contact and (he hopes) their first VR4 QSL card. Alan's future movements are obscure at present. He may, or may not, remain in Australia. His equipment is at present in the care of VR4CV. Any reader wishing to contact Alan can do so via the undersigned.

—Eric Trebilcock, VKS Inwards QSL Manager

A Transistorised S.s.b. Rcvr.

(Continued from Page 1)

vents r.f. from the b.f.o. going into the base of the first audio stage.

The audio stage is very conventional also and no special ideas have been considered here. There is a reasonable amount of negative feedback in the circuit, which helps to reduce distortion. The first audio stage is an emitter follower, and the 250K resistor would normally be an audio volume control, but is wired flat-out in this case.

Power supply for this unit has been taken from the circuit as described in "Amateur Radio" for November 1962. This supplies the —9 volts very conveniently, and is a worthwhile asset where transistors are used.

Break-in operation is taken care of by opening the emitter of the first r.f. and second audio stages as shown in the circuit. These normally return to ground in the receiving position, and are lifted on transmit.

RESULTS

The unit was found to be extremely stable, have good sensitivity, low noise figure, and no cross modulation has been experienced. Though sections may appear to be unconventional, the overall performance is highly satisfactory. A measured sensitivity (at 14.3 Mc.) of better than 18 db. signal to noise ratio for a signal of 1 μ V. across 50 ohms was obtained (compare this with the 7581). The only protection the r.f. stage has when transmitting is the aerial change-over relay.

CONCLUSIONS

It has been refreshing to take on a project such as this and finish up with such encouraging results. I am now considering the possibility of building the receiver into transceiver-exciter coming out at 5.1 Mc. This will fit in with the phasing exciter in use at present. I would like to thank the boys at work who did a lot of urging to keep the project moving, otherwise it might still have been uncompleted.

TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R." in particular the constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

STATISTICS

In a survey conducted recently, the I.A.R.U. obtained the following interesting facts and figures relating to:

Number of Amateur Stations

U.S.A. 244,250, Japan 22,000, Great Britain 10,000, Brazil and Canada 9,500, Germany 8,000, Argentina 7,000, Australia 4,500.

Percentage of Amateurs, Society Members

Germany 75%, Great Britain 70%, New Zealand 80%, South Africa 55%, Australia 55%.

Maximum Power Input

1,000 watts—By 17 countries, including U.S.A., Brazil and Argentine.

500 watts—1 country.

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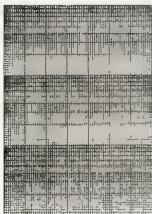
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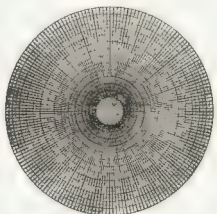
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JAMBOREE-ON-THE-AIR, 19th and 20th October

Federal Council has, in recent issues, urged Amateurs to encourage young people to take up the hobby of Amateur Radio in order to assist the nation in a technological and sociological way and to increase the Institute's membership.

The Boy Scout Jamboree-on-the-Air, is an activity worthy of the support of all Amateurs, and one which introduces a large number of young people of most impressionable age to a fascinating hobby.

Since it began in a small way in 1958, this annual international event has increased in popularity, until today, tens of thousands of Scouts in more than 76 countries are expected to be in the Sixth Jamboree, which is scheduled to begin on 19th October at 1000 hours E.A.S.T., and is to continue for 48 hours.

WHO CAN TAKE PART?

All Amateurs with a past or present association with the Boy Scouts Association, or those with Scout visitors in their shack can participate. Shortwave listeners, too, can help by inviting Scouts to listen to Jamboree activity on their receivers.

HOW YOU CAN HELP

Already many Scout Groups have begun to make their arrangements and while most will be visiting Amateurs, some Amateurs are setting up portable stations in Scout Halls and Camps. If you can help, offer your services to the local Scout Group—you will find them only too willing to accept! If you do not know any Scouts personally, or if you have difficulty in establishing contact, then get in touch with the co-ordinator for your area, whose name and call sign is given below.

SOME SIMPLE RULES

In case this is the first time that you are taking part, we will repeat a few simple rules governing the event.

1. The Jamboree is not a contest and there are no prizes given. A participation certificate, however, is sent to Scout Groups and Amateurs who send a report to the Branch Organiser.
2. The object is to work other "Scout" stations to give the boys an opportunity to talk to their counterparts and to swap experiences, etc.
3. You may enter the event by calling "CQ-Jamboree" or by answering a station you hear so calling.
4. Any authorised frequency or mode may be used. (Last year many Scouts used 8 and 2 mX which shows that in order to enjoy Jamboree-on-the-Air it is not necessary to work DX.)

BEFORE THE JAMBOREE

If Scouts are to get the most from Jamboree-on-the-Air, some preliminary training should be arranged. Training with a definite object adds realism to the event, and makes it much more interesting to the boy. Here are some suggestions:

Explain Radio Wave propagation to enable them to understand why they can hear a station a thousand miles away, but not one fifty miles distant.

Practice microphone technique using a tape recorder. Many Scouts are rendered speechless when confronted with a microphone for the first time.

Arrange for the Scouts to visit your shack a week or so before the Jamboree, to enable them to become familiar with your station's operation.

Offer your services to instruct the Scouts, say for an hour every two weeks, in the fundamentals of Electricity and Radio.

DURING THE JAMBOREE

Having made a Jamboree contact, give the details of the Scout Group you represent (or better still, let the Scouts in your shack give them).

During the event, ask the Scouts to take turns in recording the contacts in your log. (Be sure you check it.)

Don't introduce more than two or three Scouts at a time. The others can talk to the next contact.

Make sure that they know what to say. Each Scout should introduce himself, and then go on to say something of his town, his troop, patrol name, hobbies, weather, family, etc. Of course, every Scout should not say the same thing.

Help the Scouts to prepare some QSL cards, nothing elaborate, perhaps an original sketch which could be duplicated, or a postcard with a Group nametape, or badge attached, would do admirably.

Finally, send a report on your activities to your State Branch organiser, as soon after the event as you can.

BRANCH ORGANISERS

Information concerning the Sixth Jamboree-on-the-Air (19th and 20th October, 1963) can be obtained from the following Branch Organisers:—

New South Wales:

Brian Anderson (VK4AND),
14 Stuart Street, Longville.

Victoria:

John Woodburn (VK3AGD),
"Wandobah," Dunkeld.

Queensland:

Noel Lynch (VK4OS),
Boy Scouts Association,
Queensland Branch,
132 Wickham Street, Valley.

South Australia:

Roland Guy,
4 Nanteha Terrace, Unley Park.

Western Australia:

O. J. McCullough,
Boy Scouts Association,
West Australian Branch,
842A Hay Street, Perth.

Tasmania:

D. J. Finlayson,
Boy Scouts Association,
Tasmanian Branch,
107 Murray Street, Hobart.

Papua-New Guinea:

John Gwilliam,
P.O. Box 44,
Konedobu, via Port Moresby, N.G.

FURTHER HELP

Further information and assistance can be obtained from the following Victorian Amateurs who have agreed to assist with co-ordination:—

VK3AHT, Bill Magnusson (State Co-ordinator); phone 314-6760 after 4.30 p.m.).

VK3ARL, Lin Brown; VK3WC, Ewan Cameron; VK3ALE, Jack Cations; VK3ABT, Jim Barber; VK3AUL, Arthur Lock; VK3JZK, Jim Stevens; VK3AKW, Bill Kinsella; VK3TH, Gordon Morrison; VK3AGD, John Woodburn (Branch Organiser).

Some of these stations will be on the air each Thursday evening on 80 metres from 2030 hours for the purpose of helping Amateurs who require assistance or information.

In addition, the State Co-ordinator for Victoria (Bill Magnusson) and the Branch Public Relations Officer for the Jamboree-on-the-Air (Les Marmo) will be on 80 metres on Tuesday evenings from 2030 hours and on 40 metres on Saturday afternoons from 1500 hours from VK3AET (the station of the 8th Footscray Boy Scouts Amateur Radio Club) to give additional information and to receive publicity reports.

—L. D. Marmo, Public Relations Officer,
Jamboree-on-the-Air (Victoria).

★

Technical Correspondence

OVERTONE FREQUENCY OF CRYSTALS

Editor "A.R.," Dear Sir,

In the June issue of "Amateur Radio," A. S. Mather (VK2JZ) made reference in his article on "Crystal Locked Converters" (page 2) to crystals operating on their 2nd overtone, although he stated that the overtone frequency was approx. three times the fundamental. No reason or authority was given for this statement and I know of no other article, paper, or text book that could support this contention. Such classic texts as "Quartz Crystals for Electrical Circuits" by R. A. Heising and "Quartz Vibrators" by P. Vigoureux and C. F. Booth refer to 3rd, 5th, 7th, etc., overtone operation, i.e. only odd order overtones exist for AT or BT cut crystal plates oscillating in the thickness shear mode. Only AT or BT cut plates can be used in an FT243 holder and therefore I believe the statement in the article to be incorrect.

It is of interest to note that second overtone operation is encountered with some cuts of crystal, i.e. the overtone frequency is approx. twice that of the fundamental. The popular FT243 series of crystals in the range 300-500 Kc. employ CT cut plates that oscillate in a face shear mode and are capable of producing even order overtones, i.e. 2nd, 4th, 6th, etc. DT cut plates, commonly used at 100 Kc., are another type that can produce even-order overtones. Such operation, however, would not be encountered very often, if at all, in Amateur Radio work.

—David Rankin, VK3QV.

This month I would like to give you a short preview on a publication which all listeners should have. It should have the title "World Radio Television Handbook," which is published each year, contains a wealth of information on the radio stations of the world, as well as a complete list of stations, addresses and a host of other information. This booklet is the only one that has complete and correct information for broadcasting and television. The 1963 edition has been completely revised and brought up to date. It contains a quantity of practical information about all radio and television stations of the world. Whether you only listen on the Ham bands or not, you will find this publication a worthwhile addition to your library.

VICTORIA

Records, records, yet that's right, we had a record attendance of 30 members at our July meeting, which is most encouraging. Much discussion took place on several matters during the evening. We have been considering the possibility of publishing a monthly or bi-monthly newsletter. Of course this depends on whether enough members are interested in this venture. The Council meeting to put our proposals to them. But remember, even if enough members indicate they are interested in this project, we need your support in supplying ideas.

Our genial president, Maurice, gave a short talk on a.s.b. reception, which was of much interest to all. Our constructions, which are held on the second Friday of each month, continue to be of much interest to members. We are looking forward to having our guests at a future meeting the boys of the 8th Footscray Boy Scouts.

Our president (Maurice) will be acting as the MC for the VK3 S.W. Group. Members will hand out the cards at the meetings, but if unable to attend or you live in the country, cards will only be sent to you providing you supply a return address. I have been our valopie. I suggest that when sending down any envelopes, that you send down a slightly larger one than is required for the above sized letters. We will send reports to Maurice if you wish to send your cards via the Bureau.

Talking of QSLs reminds me that recently Eric L3043 received a card for his QSL. We sent out a report to you. Your acbie recently had the pleasure of a visit from Michael and his YL Denise. And it looks as though Eric will have plenty of competition from Denise, as she is a very keen DXer on the bands.

Greg L3158 reports having received the following QSLs this month: G1ARY, FJSCG, YJ-13B, VK9LA and VK6DM. At the moment Greg is considering erecting a two element beam for 50 Mc. His L3158 has been our busy constructor a tunable 1.5 for his model 3 "R. & H." 50 Mc. converter. Ron L3076 has at last got his 144 Mc. converter going to his satisfaction. Ron has a very nice 1.5 set-up at Brighton. On 144 Mc. his x.f. catcher is an 11 element Yagi and on 50 Mc. he has a 2 element QRP. The 144 Mc. set was damaged to be involved in a motor accident earlier this year, and apart from the damage caused to his car, his tx was wrecked.

NEW SOUTH WALES

There is an upward trend in the VK3 Group. Increased attendances at the monthly meetings has been most noticeable of late, but they would like to see even greater numbers come along. With increased numbers at the monthly meetings they can organise better for future events such as lectures, etc. They also have the opportunity of meeting your fellow member and discussing s.w.l. problems with him.

Members living in the country and those who cannot attend meetings are invited to send their suggestions or general business to the Hon. Sec. of the S.W.I. Group, Tom Harding, C/o. Wireless Institute Centre, 14 Abchurch Lane, London E.C. 4. All items for publication in "Amateur Radio" should be sent to Chas. Abernethy, 30 Urunga Pde., Miranda.

Chas has been reviewing a number of QSLs of late, such as D12MG, V9SEW, V9SFA, HK9KJ, HK1UJ, KP1JC, CP5SL and KG8AOK. And here is a prize scoop, a QSL from Project Oscar. Chas. has been rewarded for his con-

sistent loggings of Project Oscar which, you might recall, was the Amateur Radio satellite which had a tx on 145 Mc. and sent out h1 on c.w.

Now we would like to know if Chas is the one lucky person in the S.W.I. Groups that has obtained this rare QSL card?

WESTERN AUSTRALIA

Our stalwart from the Sandgroper land, Peter L601, has once again been in the thick of things. For the month he received the following QSLs: W3ECR, W2CWE, K4CH, W1HWQ, K7LJA, SL8RH, SP3AMZ, OZ4RL, HL8RK, Z9SFA, J4KED, UD8RE, 9R8AA, VR30, SL5CX, VR3L/VR1, KG4NAA, UO5OA. Well that's not a bad list for the month old boy. After some months of contemplating,

Softly, softly this month in regard to the region nearly west of me. That Adelaide expert in multiplication the bloke who gave me a nice P.S. last month gave out the inside dope in his notes—I hope you're right, P.S. Anyway, nothing but best wishes to any Divisional Council that backs Youth Radio Clubs, last in or not. It hasn't happened yet, but here's hoping.

Hint for Club Leaders: This is a don't-let-it-happen-to-you story. Here at Lyneham High, there was a small fire in the roof of the school burning out about an 8 x 4 ft. piece of ceiling in a corridor near our radio room. It was caused by a electrical fault around a ceiling light fixture and later this was officially confirmed. However, there was a strong move early in the proceedings to close the doors to the Radio Club because our station VK1LS was near (30 feet away) and we had put an antenna up nearby.

There are plenty of older people around who are only too ready to blame young people for anything that happens. In our case, we had right and a Headmaster on our side, but the moral for club leaders is plain. Follow regulations strictly in regard to electrical power outlets and wiring—in general, be like Caesar's wife or some nasty type will pounce on you with great relish. Especially take all possible precautions for the safety of the boys in your care.

Doug Williamson, who gives his time to looking after Elementary Certificates in VK3, gladdened this correspondent's heart by writing me some news. Since recent awards: 1 honour (J. Dawson 86), 1 credit, and 1 pass from Downslands College (Toowoomba, Qld.), 1 credit from Sefton High; 2 credits and 1 pass from Patricia Brothers (Waverley, Vic. at Liverpool, and 5 passes from Lyneham High, Beoragul, Sefton and Inverell High have Certificates waiting on practical tests. Doug himself (at Bass Hill) has some K4 boys who have built an 807 amplifier and a 2-valve a.w. set, but time is the main problem as with the rest of us. Doug began by just offering

Peter has at last decided to build the pre-amp. Just what was described in the August issue of "R. & H." However he doubts if it will be ready for the R.D. Contest.

DX LADDER

	Countries		Zns.	S.s.b.	W
	Conf.	Hrd.	Conf.	Conf. Hrd.	St.
E. Treblecock	282	288	40	---	50
D. Grantley	112	329	38	30	204
A. Westcott	83	188	31	9	107
M. Hillard	79	329	33	28	188
M. Cox	73	228	29	39	180
P. Drew	68	189	27	29	121
C. Abernethy	68	114	7	---	---
I. Thomas	43	139	30	16	97
G. Earl	38	114	11	6	88
D. Coggin	36	88	7	3	60

YOUTH RADIO CLUBS

to look after the boys, but he has developed an interest in Amateur Radio. He hopes to get A.O.C.P. soon and then his A75, TK9BS, Class C Wave meter, G.D.O. and C.R.O. will do service. I'm looking forward to a QSO, Doug.

Ralph Satchell (Hornsham Boys' High), who looks after Inter. Certificates in VK3, also writes. He agrees with a suggestion that simplified sheets of information—one sheet on one simple job—should be prepared, a few by each of us concerned, on a planned basis. This would avoid duplication of effort. More of this later. Ralph has about 15 first and second year boys very interested.

Ken Matchett (VK3 Supervisor) sends me his excellent Newsletter. No. 8. He suggests moving the reference books including "Radio for Boys" (Bradley the author, in the Junior Tech. Yourself series) and "Understanding Radio" by Welch and Eby (published by McGraw-Hill). Personally I strongly favour an excellent teaching book, "Elements of Radio" by Marcus and Marcus, which is well suited to medium standard boys and certainly beneath those instructors not yet doing A.O.C.P. Ken has been invited by the Boy Scouts' Association to discuss the matter of Y.R.C. Certificates being used for Scout badges. Clubs listed in VK3 are Ringwood Tech., St. Anne's (Sale), 8th Footscray Boy Scout Group, Geelong Tech., Heathcote High, Collingwood Tech., Warrambool Tech., Blackburn High, and Scotch College. I seem to remember also VK-LAVI, at C. of E. Girls Grammar and VK-AHL at Morwell High School.

How's your publicity going, you club leaders? Here in Canberra we had a few shots of our club station in a recent "Four Corners" programme on A.M. television. Then we have a half-page with photos in "Canberra Times". You are all news, you know—and the more publicity you get for the boys (make sure it's for the boys and not yourself, as a matter of proper public relations), the more help you are likely to get. And how about some news for me, too? 73, Ken 1XM.

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VHF NOTES

(Continued from Page 15)

reports were received on the new beams, the July field day and the July fox hunt.

Beacons: The 50 Mc. beam is operating again with the F. Skayler fitted. The nominal test frequency is 50.002780 Mc. It has been decided to make the final tube in the new 50 and 144 Mc. beams a 635A in preference to the proposed 815. This would give a power increase in the future by substituting a higher powered tube in the same socket. It would also be a good idea to enable a.m. modulation if it is required.

V.h.f. Field Day: Twelve locations were manned by the Group for this Field Day, and a considerable number of boys took part, and a very enjoyable day was had by all. Six home stations were heard but only 62CKZ sent in a log, claiming 696 pts. Of the Field Day logs received, 52DT and 62CI claimed 18849 pts. but owing to a misunderstanding of the rules this score may be disallowed. Other scores were 52GP 1320, 52ZP 1400 pts., 62MM 1375 pts. and 62AO 877 pts.

July Fox Hunt: Allyn 52DM, with the help of Peter 52DA, and I, took it as a two-stage hunt with the transmitting frequencies 50 Kc. apart. Nine cars participated and a te. resulted, 52DW and his group were first at site No. 1 and second at site No. 2. The second was at site No. 1 and first at site No. 2. Supper was partaken at Allyn's QTH and thanks were expressed to him, V.L., and Betty.

Annual General Meeting: The election of officers and an amendment to the constitution were the major items of this meeting. The constitution amendment was handed first. It affected the election. The alteration was required to enable the office of vice-president to be created and also to provide machinery whereby a member of the Council may be empowered by other Council members to chair the meeting with full powers in the absence of the patron, president and secretary.

The officers elected were: Patron, Mr. Frank Dawson; president, Dennis SAW, vice-pres., Graham 52DB; council members: Don 52AC, Harry 52C, Willy 52AA; 52GP, 52ZP, 52DS, press cor., Graham 52DS; records sec., Charles 81K.

50 Mc. Peter 52DA is building a rig using a push-pull 815 with a converter constructed and with a 5 l. yag! up about 80 ft. should be a power on this band soon. Ian 62CL at Milling is running tests and expects to earth every Sunday after the news broadcast. Three stations worked him on 51/7/63 on 50.17 Mc.

144 Mc. Graham 52DB has built a tx and rx and xal locked, using f.m. for this band. Doug 52DW has a tx and rx and tests are being conducted as the basis of the VK6 carphone net. The rx has a xal converter feeding into a 8.5 Mc. i.f. strip so that standard v.c. components may be employed if necessary.

430 Mc. There are three converters going on this band and more under construction. I believe quite a few of the boys are planning to try the 430 Mc. band. This seems to be the bottle most sought after. As techniques at this frequency are a complete change from v.h.f. on 50 and 144, some interesting results should be obtained. A lot of the local boys will be relearning and revising some of their theories.

General: Tom 52CP is now 52DP and Bill 52DC is now 52DD. I believe 62MM was at Kalgourlie staying with Bill 52DD and on conclusion of a contact with another Amateur they were called the Disney group. Maybe some day we will have Pluto on the band. Remember chaps, this v.h.f. column is only as good as the v.h.f. set to it. I hope you and we will out do VK5 yet. Ed, Allyn 52DM.

TASMANIA

The July meeting had a roll up of an even dozen and there was so much business and so many controversial points raised that Wilf TZAQ did not have time to deliver his lecture. They were called the Disney group. Maybe some day we will have Pluto on the band. Remember chaps, this v.h.f. column is only as good as the v.h.f. set to it. I hope you and we will out do VK5 yet. Ed, Allyn 52DM.

50 Mc. DX at last! But only in very minute quantities. On 6/7/63 Wilf was successful in working two weak stations. He also heard a couple of VK6s and VK7s. During the past couple of weeks, a few weak s.b. signals from VK2 have been heard by Dave TZAQ, but I think it is not heard of any other working or hearing DX. Not a great deal of activity during the cold winter months here in Hobart, I guess a few openings may have been missed.

144 Mc. John TZZG is a newcomer to this band and is heard on most week-ends and some

times during the week. No 3 was rig at this QTH yet, so I had to go to Hobart with the mobile to work Tim. Winston (ex TZAP and 52WH) now TZAQ, is also quite active on this band and has his comprehensive mobile rig working very well. Not much news of activity from up north, but some looks through via Eric 72ZD at Rossmore. Eric works closely to Hobart with 8/9 side over a path of 90 miles and keeps us informed of the doings up there. 72, TZAQ.

PAPUA

50 Mc. Several weak JA signals were heard on 7th July from 1900 to 1908 hrs. and again the same day around 1920 hours E.A.S.T. looking at around 52. On the 5th, two weak unidentified signals heard at 1925 bearing E.N.E.; the accent sounded American but signals were not strong enough for any positive identification. The freq. was approx. 50.3 Mc. JA was again heard weakly at 2025 on 1st July and also the Asiatic f.m. station on the low end of 40 Mc. heard at 53 from 2040-2105 hrs. this night. No other DX was recorded during July. The usual tonemaster 40 Mc. stations were heard on 7th, 8th, 9th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st July.

144 Mc. No activity during the month and no signals heard.

By the time this appears in print your scribe will be enjoying the cold weather of V.K.I.-land, however, I am returning to Port Moresby at the end of November just in time for the summer DX season. 72, Roy BAQ.



Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

"HISTORICAL CLEANSINGS—1914"

Editor "A.R.," Dear Sir,
The section in August "A.R." entitled "Historical Cleansings—1914" has been read with interest and will inspire nostalgic memories from many old timers.

I would, however, like to make a slight correction to the article relating to contact with S.S. "Ophir" in 1901. This was actually the work of my father, R.W. (Walter) Jenvey, who was then Chief Electrical Engineer to the Victorian Post Office. He was, at the time, operating his own experimental wireless station at Red Bluff, near Elwood, call sign RB, was requested by the Victorian Government to establish the station at Queenscliff for the purpose of transmitting a welcoming message to the then Duke of York. As it transpired, S.S. "Ophir" did not carry wireless but H.M.S. "St. George," the escorting cruiser, was fitted and two-way communication with Queenscliff was established and carried out up to 30 miles. This is, so far as is known, the first recorded occasion of wireless communication between shore and ship from Australia.

It may be of interest to know that the tape recordings of both sides of much of this historic communication are preserved in the Melbourne Public Library. Coburns were, of course, used and these operated a Morse inker for the benefit of those who could not read by sound. I trust that the above details will be of interest.

—W. W. (Bill) Jenvey, VK2ZO.

RE "YOUTH RADIO SCHEME"

Editor "A.R.," Dear Sir,
Try as I may I cannot convince myself that the Institute's work in attempting to establish Radio Clubs in Schools, is from the student's point of view, a good thing.

The time of the depression years, together with the post-war boom, resulted in a big demand for labour until the early 1950s when the trend was reversed. Since then the position has shown only slight improvement.

The point of this is that whilst one could get by with a rudimentary education at one time, the time is now past.

The education of kids today is very important, and in years to come will assume critical importance. It is therefore, something, and certainly not a hobby, should be allowed to interfere with a child's education.

Now, some headmasters report that Radio Club members show good and in some cases, improved results in studies, however I feel that you and I (as Rame) are in a better position to judge the effect of Amateur Radio

on a child's education because we (or I anyway) have been observing it for years with great interest.

In all too many cases the results are detrimental (especially at tertiary level).

Radio is not a hobby like stamp collecting or bird-watching. It is a science with challenging and absorbing practical aspects.

Kids see it as this and with the zeal and curiosity characteristic of youth (and what a curiosity it is) want on youth! they go for it.

It's no good (usually) trying to explain to them that they won't be able to make a living out of it.

You can't convince youth that its effort should be directed towards qualifications that will give it a worthwhile job in life (well usually you can't in some cases the kids have a sufficient wisdom to see what's really important).

I have seen this happen time and time again, the child often completes his education reasonably, but in many cases he does not and in practically all cases there is at least some detrimental effect.

Now I'm only speaking from my own observations and I am not advocating that the Institute drops the scheme, as I am sure it won't.

But if someone can demonstrate to me that the pursuit of Ham Radio can, in the majority of cases, benefit a child's education, then please do so.

Don't let your mind interpret my motives, let it be borne in mind that I have spent large quantities of time and petrol, for no financial reward, in the pursuit of the youth (most of whom had left school) and am directly responsible for a number of chaps being licenced. That last paragraph was distasteful to write (as it probably was read) but sure as I do not include it someone will say I'm just plain lazy.

—Al Rechner, VK3ZCR.



A THOUGHT FOR THE SHACK

"Now it's on? . . . Is it off? . . . I can't remember which. I think it's off!"

His tombstone says: "He should have used the switch."

(Ack. 235 "Banana Blad.") —BERS16/13045.

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each country. New members and those whose totals have been amended will also be shown.

PHONE			
Car. No.	Cnt. rise	Car. No.	Cnt. rise
VK1RU	3 204	VK1WL	14 211
VK1MK	43 225	VK1ATN	28 204
VK1KX	28 226	VK1W	16 208
VK1JAO	51 229	VK1RW	23 195
VK1AF	31 224	VK1ZJ	61 185
VK1KW	4 211	VK1OB	90 183

New Members: VK6GG 51 180



C.W.

Car. No.	Cnt. rise	Car. No.	Cnt. rise
VK1RG	10 315	VK1AGH	71 241
VK1R	26 260	VK1RZ	66 238
VK1AF	29 261	VK1FVH	15 223
VK1QL	8 278	VK1BZ	5 222
VK1R	29 262	VK1R	23 220
VK1RU	15 245	VK1YD	77 220

Car. No.	Cnt. rise	Car. No.	Cnt. rise
VK1XK	75 214	VK1RZ	42 202
VK1ARX	86 215	VK1J7	70 199
		VK1RW	67 197

OPEN

Car. No.	Cnt. rise	Car. No.	Cnt. rise
VK1ACK	6 200	VK1GH	3 200
VK1R	26 260	VK1R	23 200
VK1AF	23 260	VK1JA	43 222
VK1MK	14 264	VK1R	7 223
VK1R	29 262	VK1R	23 220
VK1JAO	76 272	VK1WL	45 233

Car. No.	Cnt. rise	Car. No.	Cnt. rise
VK1RW	23 210	VK1GG	90 108

Page 17



FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

FEDERAL

FEDERAL EXECUTIVE MEETING

The President expressed regret at the postponement of Vice-President Max Hull (32Z) whose mother passed away during the week. Members resolved to record their condolences in the minutes.

Correspondence included information on the 7th Australian Jamboree to be held in Victoria in 1945, approval by the P.M.O. on the use of #1 by Amateurs, disapproval by VKZ of the new Membership Certificate; comments by members on the Oceania question (VK-ZL Contest); and routine correspondence from the Divisions.

George Glover made mention of the 7th Australian Jamboree and participation by P.E. in providing Amateur communications facilities. He said that in response to our request, plenty of notice was being given us on this occasion so that proper arrangements and preparations can be made.

It was reported that some informal discussion had taken place with the Department regarding Rule 12, that the matter was being further investigated.

Ron SNB, representing the Publications Committee, exchanged views with the Executive on several matters of mutual interest. It was agreed that in future the Publications Committee would be reliably informed of the date and venue of F.E. meetings.

HISTORICAL NOTES

Anyone with records or knowledge of Amateur activities in the early days is invited to send any material they may have to George Glover, VK3GJ, C/o. Box 31477, Melbourne, for inclusion in his series in "A.R."

Incidentally, George recently produced a copy of a booklet, published by the then Wireless Institute of Victoria, which contains items of particular interest and of course will be returned, if required, after the contents have been copied.

"HAM TIPS"

We understand free copies of R.C.A. "Ham Tips" can be obtained from R.C.A. Electron Tube Division, Harrison N.J., U.S.A.

CHINESE PROPAGANDA

A rumour exists in the News Services that W.I.A. members have been circled by the Chinese Government concerning the current ideological split between them and the Russians. However it appears that S.W.I., who have reported on Radio Peking, are the actual recipients of the documents. While these people may be W.I.A. members, it would be unfortunate if published comments by them in turn of phrase that they received the pamphlets because they were members of the Institute. We must be careful to ensure that no impression of political, or any other kind of alignment is created concerning the Institute, which is completely divorced from such matters. Therefore, members concerned publicly on this matter should state as this should take care that their remarks are not misinterpreted.

FREQUENCY CUTS

Reports of frequency cuts, as quoted by "official sources" in Queensland, are entirely erroneous. Members in doubt about this might reflect that the matter is not in the hands of the Press, "official sources" and that the W.I.A. is represented on the Committee that does decide these things.

FROM BEHIND THE IRON CURTAIN

Doug Bowie, VK3IDU, a former Federal Secretary, has written from Moscow telling of his journey through China to the border of the luxurious Trans-Siberian railway, on his current world tour.

Doug says that he stopped over for three days at Irkutsk in Siberia, and enjoyed the lavish hospitality of one of the local Hamas. Unfortunately he was unable to visit the local Radio Club, but left some W.I.A. Certificates and a W.I.A. badge for the President. When he arrived in Moscow he visited the Moscow Radio Club, where members admired the W.I.A. Certificates that were presented to them, and the President was delighted at the

gift of a W.I.A. badge. Doug also had the opportunity of visiting local Hamas' home stations, being driven around in a member's car.

FEDERAL QSL BUREAU

Activity from Prince Edward Island (Canada) has been organised by WFFWJL between 24th and 30th Sept. 1963, and also during the annual VFW Contest. While most operating is planned for c.w. on 3542, 7043 and 14603 Kc., s.a.b. will be available at times. Operation on other bands is subject to prevailing conditions. Contest with P.E.I. is an essential for those wishing to qualify for the W.A.V.E. award. All QSLs will be answered via Bureau unless s.a.b. is enclosed. For specific schedules and any other information, contact T. E. Pederson, WFFWJL, 5158 Pepin Place, Madison 5, Wisconsin, U.S.A. The call sign to be used from P.E.I. is VE1/VEI.

Fred, VK3BR, who is currently making a good noise on 14 Mc c.w. between 0800 and 0900 almost daily, is a Swiss lad who is employed by Codelco, a Canadian company, who has some nice equipment, is helping many stations to achieve the W.A.V.E.C.A. award.

Olavi, OH3BBR, advises of activity from Aland Island, OH3B, during August and possibly later. Aland Island enjoys separate country status and all bands will be used. Mode is not stated but all QSLs go via WFFWJL.

Advice has been received of the formation of A.R.A.—Amateurs' Radioes Algeriens—as of May 1963. This Society is the only official body of amateurs in Algeria with address Postbox 3, Alger, Algeria. The QSL Bureau will be conducted by G. Deville, 21 Boulevard, Victor Hugo, Alger.

The overall poor conditions that have persisted in VK on most of the DX bands during the past few months is reflected in the steep decline in the number of QSLs received in July when the total fell to just over 3,000 cards.

—Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

The monthly general meeting of the VK3 Division was held in Wireless Institute Centre, Crown Street, on Friday, 26th July. A good attendance was treated to part two of Bob Wynch's (20A) lecture on "A.V.E. for S.A.B."—a most informative and entertaining follow up of his previously given lecture on this very complex subject.

With the Jamboree-on-the-Air just around the corner (Oct. 18-20) we do urge all Amateurs throughout the State to fully participate in this very worthwhile international radio "get-together". A number of enquiries have been received by Council from enthusiastic Scouting groups anxious to make personal contact with Amateurs who are prepared to make their shack available for all or portion of the week-end.

Readers who are desirous of obtaining Slow Morse Recordings will be pleased to learn of the latest arrangements made by the VK3 Slow Morse Co-ordinator, Frank ZACQ inform us that he anticipates being able to supply disc recordings with 40 minutes of nominated speed Morse for the approximate price of 1/6 per disc. There will be further information on these very satisfactory arrangements in the near future.

To the organizers of the South-West Zone Convention at Narandera, Council wishes you every success for the 5th and 6th October. This holiday week-end promises, as usual, to be a most interesting and enjoyable period for those fortunate enough to be able to attend. The subject for the lecture at the October general meeting at Wireless Institute Centre

SILENT KEY

It is with deep regret that we record the passing of—

VK3CH—A. C. Harris, 1/8/63.

will be titled "Communication Logic". This lecture will be ably presented by Val Malesworth (3VO). 7X, 25W

HUNTER BRANCH

The August meeting of the Branch was held on the 2nd at the University College. The "do it yourself" type of night has proved very popular of late and this meeting again took this form. Those who described gear chose widely differing topics and a most instructive night was had by the 39 who attended.

Frank ZAPQ displayed a model of his one-man antenna mast and gave a very full description of its design. Those who have seen the installation agree that it is an excellent idea and Frank has even suggested that he might write an article for "A.R." Next came Stuart RAY who displayed a very interesting transistor audio oscillator which could be continuously varied from 18 c.p.s. to 15 kc for use in testing and alignment. This was a practical design which worked extremely well. Stan 3AYL, besides being QSL officer, has the reputation of being the best chassis maker in the area and in his talk we found out why. Stan showed how to make a multiple chassis drilling jig, the one on display being for the Multitron project.

Key 22KW, who was reported to have a swimming pool in the back yard, told the meeting the full story of the 60 foot mast, for which the hole was dug for the evening. Very interesting listening and all present learned some very practical physics in connection with the problems associated with the section of the design. The final lecture for the evening was Bill 22WM who had presented a printed diagram of his "stand-by receiver" made from surplus parts. The set was an excellent example of thought and ingenuity and Bill is to be congratulated on an interesting lecture. Ian 22IF moved a vote of thanks to the lecturers and this was carried by acclamation. Arrangements for Field Day and Field Day to be held in October were given by Les 22R, our worthy President at the meeting. His right hand man, Gordon 22GS, helped him to find for your information, here it is. The usual meeting of the Hunter Branch set down for 4th October will again take the part of a "do it yourself" night but there will be no competition for the most interesting lecture and a prize will be awarded. It is hoped that as many visitors as possible will take part in this activity and the rules are simple. A maximum time of 15 minutes will be allowed

W.I.A. N.S.W. DIVISION

Hunter Branch

TWELFTH ANNUAL

CONVENTION

to be held

4th, 5th and 6th OCTOBER

Friday 4th at Newcastle University College, 8 p.m., competition night.

Saturday 5th at Esplanade Hotel, Telford St., Newcastle, 7 p.m., Annual Dinner

Sunday 6th at Marmont Point, Lake Macquarie, Field Day.

For full details read Hunter Branch notes and the September Bulletin.

Book now with Hon. Sec., G. Sutherland, 15 Marine View, Newcastle, or Pierce Healy, 69 Taylor St., Bankstown.

Convention: £12/5 per person. Field Day only: 10/- per family ticket.

for each speaker to describe and demonstrate his gear which must be shown working. At the conclusion of the meeting an award will be made to the lecturer who, in the opinion of the audience, has given the best presentation. Here's your chance to describe that piece of gear. Remember all members and visitors, whether associates or not, are invited to take part.

On Saturday, 18th October, the Annual Dinner will take place at the Knapdale Hotel, Telford, Shropshire, commencing at 7 p.m. The guest speaker on the second evening will be Mr Barry Beresford, of the Mullard organisation. Tickets will be 25/- per person for Dinner and Field Day.

A new location, Marmont Point, near Tereba, on Lake Macquarie, has been chosen for the Field Day this year. The day will commence at 8.30 a.m. with an all-day scramble and events during the day will include hidden tx hunts and a disposals shop with a launch trip for those who wish to get away from it all. The most popular event of the day is expected to be the multiple 2 mx tx hunt during which several tx's will be hidden within a mile or so of the shore. The best prizes for the contestant who finds the largest number and for the tx which remains undiscovered will be a 20/- family ticket for the Field Day only, the admission charge will be 10/- per family ticket. Hot water will be available free and there will be a well stocked shop with a large selection of books and maps within a few yards of the park. All details of the convention will be found in the Sept. Bulletin.

As far as activity round the Branch is concerned, I am sure that they have all gone into hibernation, or else, like Bill ZEL are playing truant. Bill has just put in his first trip for the railway so it's quite safe to visit him again without being asked to carry buckets of concrete out to the site. Jim JAZZ has the new Collins rig in full operation now and is having a great deal of success. He has at least eight new countries added to his score during the past month, which is a pretty good going as I cannot remember having eight all told as yet. Jack JKG, who, by the way, is just on the point of leaving for his new job, is proud owner of a super selective receiver which he built himself. I dare not give you details but watch out Mr Collins. Bruce Morley is making something of a name for himself of the two in line gear and buying a Drake. One rather nasty tip told him to get some more of the same. He says he'll be back.

Bob JAGW really flattered me the other day. He reported my signal four 8 points louder than Bill ZEL. Mr. Rose, who will never do it, told me that he had been told that Gordon ZKSG is having another holiday, no doubt a big one. To get the rest of his life out of the air. Tom Davis is thinking of leaving a big hole in the time and Mac ZKMO is still trying to straighten out the 3 meter needle which was bent when Ken ZKWK put the new tower in the ground. Sid Rebe, Harold JAMA's tx, is having the cobwebs brushed out which you will agree is a good thing. Ken JXZ is completing his forthcoming Orange Hill and Bill ZEL is watching his aerial get further and further out of sight as the tree grows. Up in Cessnock where the tree is, the boys are still hanging round. The boys are still hard at it keeping the viewers happy while one of the boys, Sherwood, dreams all day about his latest love—a beaten up AFD. The boys are still hanging round. The boys are still hard at it keeping the viewers happy while one of the boys, Sherwood, dreams all day about his latest love—a beaten up AFD. The boys are still hanging round. The boys are still hard at it keeping the viewers happy while one of the boys, Sherwood, dreams all day about his latest love—a beaten up AFD.

Don't forget the next meeting which will be held, as all other Hunter Branch meetings, in Room 11, Lawsonian Building, University College, at 8 p.m. on Friday, Sept. 6. The lecturers on this occasion are from the Central Coast Radio Club. The first speaker will talk about a converter for 80, 40 and 20, and Lindsay JON will examine the selectivity curves of receivers using a wobulator and oscilloscope. The second speaker will give interesting talks. Just before I close, did you know that we may have another call sign on the air for the next exam? Well, we're hoping. T3, JAXX.

BUS MOUNTAIN SECTION
The July monthly meeting was well attended, there being 12 members and 10 guests. The new heater proved to be more than ample for those present at the meeting. A tape lecture on "Billions Diodes" was given, and a slide projector was made available for this lecture. Thanks go to Dennis JAWW and yours truly for providing the projector. Keith JANK has acquired a new car, with which he is trying to prove it is the fastest car on the road, even before the smel of new paint has worn off. I am very pleased to hear that John JNC has decided to come up on 3 mx again. Reg ZEMR and Stephen ZSEK are now happy again, John is constructing a s.s.b. rig.
Anyone listening on 2 mx may have heard some strange signals on about 144.8 Mc. It's really nothing to worry about. Norm JGA has been sending Morse at a very slow speed for years truly and anyone who may be interested, being an ex instructor with the Forces, has been doing a real good job. Ken JAWN is also going to join in on this instruction and relieve Norm to some extent. It looks as though there could be Morse instruction on two nights instead of one. For those interested, listen around 1800 hours on Monday nights.
Stewart ZLLS ran into a rusty nail and made a mess of his leg and had something like two months rest from work, but during this time his mouth was working overtime. Stewart is putting a 4 plus signal into this shack, and it sounds a really good signal, audio wise. By the time you read this Stewart should be back at work and fully recovered from his 4 mile run.
I had an over or two with Jack JADP the other night. He had two lads from the Penrith High School in the shack. One of their remarks it appears as though they have a Radio Club in operation each Monday lunch time. Yours truly has done a SSB tx for use by their club. The club has about 15 or like 12 members, and instruction is given by one of the teachers. Looks like we have another school radio club for the Youth Radio Scheme.
Derrick Boyd is still waiting for his call sign. Derrick has obtained his full call and is the time of writing, I do not know as to what frequencies he intends to operate on in the immediate future. Ray Watts, of Mt. Druitt, was to leave at the test exam, and under the guiding eye of Warwick JAWW we hope that Ray has done the right thing by his instructor. Best of luck, Ray.
Dennis JAWW is still preparing for Amateur tv and next month I hope to have some details of his equipment. For those concerned, I will give details of the method of reporting he SWL on Sunday mornings. JAWW reports to SWL at 1030 hours with any news from this section. At 1000 hours yours truly (ZENS) calls JAWW to give him any information that he has as the public. Dennis is not there, I report in on 2 mx to the station who will be doing the v.h.f. broadcast on Sunday night. This will then report to SWL at 1030 hours. Anyone in the Mount Druitt Section can contact either Dennis or myself and we will pass on the information to SWL. T3, ZENS.

CENTRAL COAST ZONE
Reports received from Doug JARA are that he is enjoying his tour of W-land immensely. He has been worked from VERID, WESTOP and WAEKEX along the West Coast as far south as San Diego. He should be able to tell us what Greyhound buses look like when he returns. Phil STX is still away in Ja-Land. The car and the car is being controlled by JANK, who returns from a short trip to VE and W. At a recent Gosford Radio Club meeting, the speaker JSTX gave a complete and simple crystal-controlled converter for 80, 60 and 30 mx and Lindsay JON demonstrated selectivity curves of the BC453 and Drake JA. A cathode ray oscilloscope was used as a detector. The output is taken via the product detector which gives an accurate picture on an ordinary oscilloscope.

W.I.A. N.S.W. DIVISION
South Western Zone
ELEVENTH ANNUAL CONVENTION
at NARRANDERA
5th and 6th OCTOBER, '63
Hotel, Motel and Caravan Park accommodation available.
The usual field events will be held and a good time is assured for all.
For bookings, contact—
Frank Pearson, VK2ACQ,
42 Frederica St., Narrandera.

Contributions to Geoff JKA (formerly ZKGM) on obtaining his null ticket. He now operates an HT21 from Kanwal. When t.v. servicing permits, he is heard on 80 mx side-swinging, as often as 100 mx. His transmitting members are likely, as John JND is ably managing electronics theory classes for about 30 club members. Major JXU has a high level of servicing practicals and discussions of components. Harry JXJ is President of Way Way Rotary Club for the next year, and will be in the area of 100 mx. Former club member, Peter Van Gorkum, heard from JAGN at Bathurst recently, and also on the same mikes that old identity leaves in this week's news. As for the future, we have to take a course of slow telephony—very appropriate for a man with fingers calloused by Morse key manipulation. Graham JAGN was a week in the way towards the end of this memorable contact—after all, it was his station! He uses a Viscount tx.
Red ACU is miked by the boys. He is holding the fort at Concomber for some time, but manages to talk to us with the Swan transceiver most nights for a few hours on a 100 mx. John JAWW is still working with counting machines. A welcome visitor to the district recently was Stan ZEE, from the high level of service in the area. It was that city's bracing climate to enjoy a few weeks by the lake at Toukley.
Fred JALJ is very pleased with his home-brewed SSB phasing. He has a 2000 mc and gets good reports—nice bottle, the EDQJ. Bryan JAVJ is almost ready to go, with his 1000 mc home-brewed SSB. He is still heard talking to his ZL friends and others on 80 mx. Norm JALJ has finished building his house at Terrigal and should be on the air soon. He is still at him at the shack recently. T3, NON.

VICTORIA
JULY COUNCIL MEETING
The cold weather kept several members away, but by starting a quarter of an hour late we made a forum with a margin to spare. Among the items discussed during the evening was the matter of Membership Certificates. This Division has used all they had and the Divisional Council in JAGW is the existing job. As this is really a Federal matter, Federal Councillor will take the matter up.
The Air Force Association asked the Division to provide an exhibit at their show during the early part of September. This request was met with a lot of objections. After lengthy discussion, Council agreed that it could not accede to the request, as the time available for preparation was insufficient, and it was preferable to have no exhibit, one which was below the required standard. It was decided to form an "Exhibition Subcommittee" of the chairmanship of Kevin JARD to handle future exhibitions, and make sure that a high standard is maintained.
Ten names were considered for admission to the Division, four of whom had full membership and six for associate. These names will be submitted to next general meeting. The question of new members raised, and despite several gentle hints in these notes no improvement has been noted. If anything, the condition of the roster has worsened. Therefore, all Group members are urged to get in the room will be contacted and informed of the position. Any Group not co-operating, will have their names removed from the list.
It was decided that the offer by Keith JYQ to make two test re-broadcasts on Sunday evenings would be accepted. The future of the additional output will be decided in the light of results.

We have a volunteer for the job of producing the new letter work for the January August meeting, to hear a discourse on DXing. Ken JTL covered propagation conditions, Ivor JXB was heard on the outward QSL side of it. The Rev JSTJ spoke on the subject of the inwards QSL bureau and awards. Time ran short, so question time was cut, short and left for the next meeting.
Somewhere along the line it appears that I missed publishing the fact that the change of meeting place was a permanent move, and the result was a lot of confusion. The new location. So friends, please remember that all future meetings will be held at the rooms at 678 Victoria Pde., East Melbourne.

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QUEENSLAND

Our Sunshine State Contest went off well and now that the usual last minute rush of logs is in we should soon know who are our mainstays for the R.D. Contest. Some of the best contacts were rattled off smartly on 80 mx between Brisbane, Southport and Thund-

Our Sunshine State Contest went off well and now that the usual last minute rush of logs is in we should soon know who are our mainstays for the R.D. Contest. Some of the best contacts were rattled off smartly on 80 mks between Brisbane, Southport and Thundabah.

Federal Council recently requested information on old time experimenters who sported XQ call signs. One at least has been traced. He was originally XQL, W. H. Hannam, of Stanford, and is now VK2AXH of Terrigal.

A newcomer welcomed to the pipe smokers' club of 80 mx s.a.b. is Arthur 43A, ex 42SA. We hope to see Arthur really busy there in the RD Contest and we understand that Herb 40K has finally neutralised his transmitter. Len 46K has been out of the game in the degrees of frost the other morning up Thulimbah way (Yes it is the Sunshine State) Len 46K has a friend who is trying to be very helpful by keeping the QSL cards rolling in, but Len can't locate him to thank him in person. You truly have had each other's card for a time when the rig was stacked under a corner of the house.

Tommy 4ZAL has been getting amongst it there lately on 5 and 3 m. 4ZBO and 4ZCI are helping him on 4ZAS. 4ZAS is a 2 m. 3ZOM mobile is a visitor to the Sunshine State at present and could be the cause of the woes of Ross 4RO. Mick 4ZAA was most impressed by the card from 3ZOM. The name was followed by the letters F.M.S.T. After racking the brain and finally settling for Fellow of the Meteorological Society of Tasmania, he found the very small print on the back which said Failed Morse Seven Times.

Did everyone hear Jimmy 4EZ on a.s.b.? What is there that some people don't do, eh? Max 4DA, out Dalby way, is flat out on his a.s.b. project. Other a.s.b. rigs aren't in the event with this one. Nothing less than three-eighths inch cast metal for the v.f.o. chassis, with the whole lot in an oven controlled to half a degree. Col 4CJ carefully built up a "rig" power, and Col 4CJ writes and writes and doesn't like their front ends overloaded, reported that the quality was poor and so Col is back to the original again and wondering what's wrong with the new one.

Saw in last month's epistle from Panby that Jeff is breaking the filial bonds with Tubby to the extent even of having his call sign changed. Shame on you Jeff. Where is your old mate Ben SMP these days? Did his wife start again? The old QTH is dead and buried. I hope to appear in one of the columns what with the last of the Mohicans in the form of Frank Ask departing for other climes. Even our Editor must have memories of the duck shooting—black type, that is. Sorry to hear that Bill the main stay of the institution has given Amateur Radio a shove. I suppose he is going to devote himself to some of the victories on our happy shack to learn how the dusty conditions destroyed so many W0Ts.

Union's busy day. The following comments. The Burdick Radio Club held its meeting on the last night of August, the main business of the evening being the organizing of as many members of the club as possible to take part in the 1934 Contest. Altogether we hope to have seven club members competing. If 8 mox opens up we will have another three operating. After the meeting three Mullard films were shown and were appreciated by all. The evening concluded with supper provided by the club. The U.S.V. Club supper most enjoyed by Frank KZFA.

George 4GS is showing signs of interest in Amateur Radio. He actually asked what a certain bit of gear was and seemed most inquisitive. When informed that it was a Short

Wave receiver, his face was wreathed in smiles but the boys haven't yet quite worked out why. Notice that John ADK attended the W.I.A. meeting in Brisbane. The old bug again John? No matter how long you leave Amateur Radio alone it will break out again. Giving up smoking is far easier than breaking away from Amateur Radio.

Claude 4UX, who has been using c.w. lately because no one would talk to him, found the fault that laid his signals low. Or rather Vic. Wright, an associate, found it. Viv climbed the tower and found that the shorting stub had not been soldered. So now Uncle Kray can use phone again to work DX, much to the relief of Jess, his XYL, who was certain that she has no future in dits.

Frank 4CW lost his father recently. Mr. Hocking was a respected and well liked man and although not having any particular interest in radio was one of the early radio traders in his district. Some small idea of his popularity may be gained from the fact that 150 carloads of friends and relatives followed him to his last resting place. The Burdekin Radio Club was well represented amongst these.

By the time you read this Viv Wright will have some idea whether he will be driving a loco or a control panel in future. Well you were warned, Viv; if you work in radio you will be driven loco anyhow, Viv is sitting for a F.M.C. ticket.

Lou Sharpley, an associate s.w.l., will be clear of Kenmore Hospital after six months there by the end of August, and will be back at the dial twiddling that he has missed during his sojourn.

The Bundaberg Club are making progress with obtaining a lease of three floors of the East Bundaberg water tower as a club shack. Resale is at 50 pence per sq. ft. plus normal rates. Lucky blighter! The Council is now providing materials for the club to install to its own requirements. What a site! They don't even have to put up a mast. It's noticed that the Bundaberg Club are not the only ones to all have the backing of their Council, some of whom even attend their meetings. Now, if we Brisbane Amateurs could interest the City Council, there is a certain big building with a large club in it a nice central position

73. 42QM

WIDE BAY AND BURNETT BRANCH

Attended the meeting of the above branch held in the Maryborough Scouts Hall, at which members from Bundaberg, Maryborough and Gympie signed the record book. After the presentation of the record book, the president, the needs of the inner man attended to, the 4LN put on a programme of films, some of the subjects being on radio telescopes, a "Safety First" film called "Hazards—nothing to do with gun hazards" from the Bundaberg Club, and a film on mountain climbing. To brother, after watching the climbers walking up the sheer sides of the mountain, I felt like the old woman who said that she likes the terra firma and the firmer the less terror. Some of the boys took themselves to the blindfold bunts and all voted it a good day.

Two of the Bundaberg boys, Arch and Lee, recently visited the P.M.Q. Dept. to show them what they could do with dots and dashes or dits and darra, and let's hope that they were so impressed that they crossed the Z out of their call signs. John Antella was also in this effort, but he also had to convince them that he knew all the answers. Here's hoping.

The Gympie Radio Club has secured rooms and have fitted them up to start off the boys club on 9th August. Hope to tell you more of this next month. 73, Fred Cox.

TOWNSVILLE AND DISTRICT

Once again the R.D. Contest and the Scout Jambores-on-the-Air is upon us. It beholds us one and all to get our gear overhauled and ready for the contest. We have been told that our State I know exhorts us all to submit logs in the R.D. Contest and we were only beaten last year by the chaps who operated and failed as usual to submit their logs. I am sure that we will not be so easily outwitted and fail to help out on a State basis. This is noticed by the call signs on the air and not mentioned in the list of names who have submitted their logs. It is only fair that we should be able to get the Committee can cross check the winning logs.

It is to be hoped that the Scouts take the opportunity in this district to visit the various Amateur shacks, where they will be most welcome and who knows that there may be some who will have their appetites whetted to study and join the ever-swelling ranks of Amateur Radio.

This morning heard John BQJ/M on 3.5 Mc and was pleased to see that he was again sojourning in the Sunshine State this winter. Basil 4ZW has now joined the ranks of the

select few and is now the proud possessor of a Mark 3 Victrol. Bob GRW slightly upset to get a s.w.i. report to say he has a rough a.c. but musical note, but perfectly readable on phone. How do they arrive at their reports

Charlie 48A will arrive at last! Reporters make the best of it as there is no DX to be worked. (I can sympathise with him seeing I am still on sick leave.) On the grape vine I hear there is a 3 x3 link between Gordavale and Cabana, but sorry to say no activity yet. Cornwall will have A1 and Tonsbury work on 3 x3. Reported from the far north that Alec 4MA about to stage a comeback after two years absence from the band. Deepest sympathy is offered to Harry 4HK and family on the sad loss of his father. S.W.I. are on the air from a small country, it is a 2 x2 transmitter set to monitor the air while Basil is using his HQ10. You will need some help Aston to get it back.

Wonders will never cease. August "A.R." arrived today, 31st July. Mins has had the bad habit of arriving after sending off the notes. Sorry to see that no notes appeared for 4W1, have to get another sub-editor seeing that the baldy headed chap towed it in. Just couldn't take it. I bet there is a certain scribe who will be sorry to know the foregoing. No flowers by request. T2, 4W1.

SOUTH AUSTRALIA

The monthly general meeting of the VICA Division was held in the usual clubrooms to a good attendance of members and visitors. For the first time, the members were seated over the border; the number was 114 and all present thoroughly enjoyed a lecture on electricity by Mr. R. Gurr (ENJO). The lecture was given by Mr. R. Gurr (ENJO). The lecture was right up to its usual high standards, not too technical, instructive, and a little bit of humour which is the hallmark of the professional as against the amateur. Rob made a number of points, and to prove his points, gave quite a few useful and practical hints and questions were asked. The lecture lasted about half hours of his lecture seem more like minutes. An unusual but very effective closing to the lecture brought up on the podium Mr. Nutt. He was a very pleasant speaker, and people, who displayed a number of condensers from stock, gave a short description of their availability of supplies. A question time rounded off the lecture, and at its conclusion Rob thanked the members for their presence and their applause which followed the vote of thanks by Leith S.G.C. can be taken as an indication of the high standard of the lecture. The meeting with George S.K. handing out QSL cards with reckless abandon to all and sundry (Rick) then received a listeners card from (Rick). The Rock's section of the meeting was ushered in and most of those present ushered themselves

The general business was purely local, and so as the afore-mentioned dublers and scoundrels from across the border would know how to avoid the critical notice of the Tax and Customs Division, it will remain that way, and thus Geoff SEZQA, our Federal representative, was not invited to the annual convention of the Tax and Customs Division, and what came out of this. This naturally took time, and at its conclusion, the Chairman, Mr. J. H. W. Smith, of the Tax and Customs Division, of 11 p.m. for all meetings, the Chairman, Phil BERN, thanked all present for their attendance and for the very pleasant and successful night I felt, and one which would bear repeating. Among those who were present were Mr. J. A. D. BERN, of which, Wally SEZHR from Gumeracha, Erie SEZ from Foreston, and K. Broad, who I met at the time the President of ASER, up on Mount Lofly.

The social world this month was again with excitement at the news that Arch 5XX and his wife, 51Z, were celebrating their 50th wedding anniversary at a little "do" somewhere in Clarence Park. Among those present were 51Z's sister, 51Y, and 51Z's son, 51X, and applause was loud and long. Luke, present for Arch's and his blushing bride with a silver tray from the Northern Neck, which for the benefit of those who do not know, is a little over a threepenny bit in a large box; I was among those invited, but duty called in no uncertain terms, so I was unable to be present for him a couple of canaries and a weeny, and possibly an opportunity will present itself in the future to be present for him. Anyway you two love birds, congratulations and best wishes from all and may the future years pass as happily as the behind years.

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